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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/586,341	07/14/2006	Fumihiro Hayashi	049677-0186	2432

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MCDERMOTT WILL & EMERY LLP  
600 13TH STREET, N.W.  
WASHINGTON, DC 20005-3096

EXAMINER
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LAM, CATHY FONG FONG

ART UNIT	PAPER NUMBER
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1794

MAIL DATE	DELIVERY MODE
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05/02/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/586,341	<b>Applicant(s)</b> HAYASHI ET AL.	
	<b>Examiner</b> Cathy Lam	<b>Art Unit</b> 1794	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 June 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____.                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>7-14-06, 6-21-07, 6-26-07</u> .                               | 6) <input type="checkbox"/> Other: ____.                          |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

1. Claims 5, 8 and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 5, there is lack of antecedent basis for "the average grain size of the ....".

In claim 8, the processing step contradicts the processing step of claim 2. Claim 2 involves forming through hole and/or recess from both surfaces of the substrate, whereas claim 8 involves forming through hole and/or recess from only one surface of the substrate; and claim 8 depend on claim 2.

In claim 10, step 4 is indefinite, as it is not clear whether the porous molded product or the nonwoven fabric was plated once on the entire surface followed by a plating catalyst then selectively plated over the plating catalyst. Clarification is required.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-9 and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meola (US 5498467) in view of Hiraoka et al (US 5684065).

Meola teaches a process for producing conductive areas in a porous member to form a printed circuit board.

A porous member that includes a series of conductive paths through the thickness direction from one side to another side of the member is formed by the following steps:

Firstly, treat the porous member with a liquid radiation sensitive composition (col 2 L 47-49). Secondly, place an opaque mask over selected areas of the porous member (col 2 L 58-60). Thirdly, expose the treated member to UV radiation (col 2 L 61-62). Fourthly, remove the mask from the porous member (col 2 L 65-67).

Sixthly, apply a reactive metallic cation replacement solution to the porous member to provide a suitable stabilized area to receive a conductive metal (col 3 L 6-8). Wherein the metallic cation is preferably a palladium or a gold (col 3 L 11-13). The examiner is taking the position that this metallic cation replacement solution coating step is equivalent to the claimed plating catalyst.

After the metallic cation replacement solution is deposited, the porous member is subjected to electrolessly plated with a conductive metal salt (col 3 L 14-16).

The porous member is a stretched microporous polytetrafluoroethylene. The porous member can be another material such as a woven or nonwoven fabric, etc. (col 4 L 1-4).

Meola teaches the processing steps of the present invention except it does not teach the use of spraying a fluid or spraying a fluid containing abrasive grains from above the mask.

Hiraoka teaches a molded fluorine containing article that is to be surface modified.

The fluorine containing resin molded article, is irradiated on its surface with a laser beam through a basic solution (col 1 L 60-63 & col 3 L 3-5). The basic solution can be an inorganic basic compound or an organic basic compound (col 3 L 32-36).

After the laser beam irradiation through a basic solution, the molded article has an improved surface for electroless plating of a metal (col 6 L 32-35).

In view of the prior art teachings, one of ordinary skill in the art would use an abrasive fluid with or without abrasive grains for forming through holes or recesses in a substrate because finding a workable method involves only routine experimentations.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 12-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Fukutake et al (US 5252383).

Fukutake teaches a printed circuit board comprised of a polymeric substrate (1), through hole (4) and a metal layer (2).

Through hole (4) is formed in the polymer substrate which is a porous fluororesin sheet (1). Metal layer (2) is plated onto the surface of the polymeric substrate and plated onto the through hole. The metal layer forms printed circuitry (col 1 L 55-64 & Fig. 1).

***Double Patenting***

6. Claims 1-11 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-4, 16 and 28 of copending Application No. 10/559,580. Although the conflicting claims are not identical, they are not patentably distinct from each other because the processing steps are similar.

7. Claims 1-11 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-3 and 6-13 of copending Application No. 11/660,993. Although the conflicting claims are not identical, they are not patentably distinct from each other because the steps of making the product is similar.

8. Claims 1-11 provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-21 of copending Application No. 10/551,459. Although the conflicting claims are not identical, they are not patentably distinct from each other because the processing steps for forming the product is similar.

9. Claims 12-13 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-5 of copending Application No. 11/994,115. Although the conflicting claims are not identical, they are not patentably distinct from each other because they are structurally and materially the same.

The above rejections are provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

10. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cathy Lam whose telephone number is (571) 272-1538.

The examiner can normally be reached on 9am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on (571) 272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1794

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Cathy Lam/  
Primary Examiner, Art Unit 1794